

POULTRY

BREEDING BY SELECTION.

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In the early days of telegraphy each instrument was equipped with a recorder on which the message was recorded in dots and dashes which was afterward transcribed into long-hand by the receiving operator. Then came a time when operators became so expert that the recorder was discarded and the message was received by sound and transcribed as received. The recorder was too slow and cumbersome for business methods required more rapid and accurate service. There was a time when the score-card was deemed all important and each bird at poultry show was laboriously handled and scored by the judge who called the cuts to an assistant who handled the cards and recorded the calls. When there was a thousand or more birds to be scored it meant four or five days or longer of time that for show purposes might have been better spent. Panners became impatient and demanded a quicker service. Judges became more expert and comparison judging became the fashion. There was a time when breeders guessed more or less accurately in mating for results in exhibition or utility

lines. There was a time when breeders were indifferent as to exactly the number of eggs produced by pullets or hen's in a year's time and could not to save them give the average number of eggs produced by any pen in their yards. Then came the trap-nest and certain breeders vied with each other in keeping an accurate trap-nest record. Each layer was trapped when she sought the nest and was afterward released, her leg-band noted and laboriously recorded in a book kept for the purpose. Was the record accurate and did it not faithfully show the exact result? To be sure it did. If you are old enough, did you not learn your A, B, C's and laboriously learn to spell up, up, ox, ox, etc., and when sufficiently educated you learned to read "I can see a man go up; did you see the man go up? Yes, I saw the man go up." Learned to read all right and possibly learned to spell correctly. Yes, in time no doubt, but expert teachers learned a shorter route to attain the same result and the modern Normal methods prevailed.

Now, this is precisely what has taken place in modern methods of breeding by selection. The breeder for specific results who has had, say twenty, twenty-five or thirty years' experience, who has studied his sub-

ject in all its phases and has observed and noted results attained year after year has become so expert and so thoroughly familiar with each individual in each breeding pen that the exact results to be attained and the slightest variations therefrom are as clear and distinct to him as the click of the instrument is to the trained ear of the expert operator. To begin, then we can not do better than quote a few lines on line-breeding by the able poultry editor, Mr. Thos. F. Rigg, who says: "Were my entire stock to be wiped out of existence, I would start anew in the breeding of standard bred poultry on a basis which my experience has taught me to be correct. I would purchase a cockerel of a breeder who has been line-breeding for a term of years. This cockerel should be the best representative of the breed possible to secure. I would then buy a pullet of the same character. We now start with a pair which has come down from a line of ancestors which have been carefully and systematically bred in line for years. The product of this first mating will not give us anything exceptionally good in standard markings—probably no young birds superior to the parent stock, and a large number of the progeny will have to be discarded. This because we have united two strong blood lines and in the progeny each has struggled for supremacy. At the close of the breeding season we separate the pair, placing the male in bachelorhood and keeping him there until placed in the breeding pen next season. We call the original pair Group No. 1 and the pullets we have reserved from this mating for next year we designate as Group No. 2. We have most carefully selected these pullets, only the very choicest being retained. We will reserve also the choicest cockerel. Next year we will mate the male of Group 1 to the pullets of Group 2. The female of No. 1 is mated to the cockerel of No. 2. This will give two pens which we will term A and B. The progeny from A will be three-fourths the blood of the original sire and one-fourth the blood of the original dam. The progeny of B will be three-fourths the blood of the original dam and one-fourth the blood of the original sire. In selecting the stock for the next year we reserve by selection the very best specimens. Again we mate pens and

use a typical cockerel from the progeny of A and a pullet or pullets from the product of B. This will give us stock of but $\frac{1}{2}$ the blood of the original sire and $\frac{1}{2}$ the blood of the original dam. Also the same year we mate a pullet from the produce of B to the original sire, which gives us chicks $\frac{3}{4}$ the blood of the original sire and $\frac{1}{4}$ the blood of the original dam. Also a cockerel from the progeny of A is mated to the original female which gives us chicks $\frac{3}{4}$ the blood of the original dam and $\frac{1}{4}$ the blood of the original sire. Here we have been changing blood without changing types. We have kept the male line unbroken without inbreeding." In each of the above matings, the utmost care is exercised by the breeder in selecting the individuals that go to make up each breeding pen, first generally as to standard requirements, but if for great egg production, if an individual has shown a remarkable attainment for laying, she may be retained, even though she might otherwise be discarded if exhibition merit alone were sought. In individual selection where line-breeding is systematically followed lies success only. Each year a great number must be produced in order that a choice few may be selected. In individual selection of layers two years are required for each successive group. For instance, we have one male and fifteen females in a pen. We note first, that the germs of their eggs are strong, denoting vigorous parentage. If weak germs, discard the male or re-arrange the environment, or discard any female not active and vigorous. Now watch the egg production. In our bred-to-lay strain we want from that pen seven or eight eggs per day in November, about the same in December; January should show a slight increase; February something like 10 to 12 eggs per day; March about the same. April, May and June must average 14 or 15 eggs per day, July and August, 8 to 10, September 6 to 8 and October possibly 3 or 4 eggs per day, giving a total for November of 210, Dec. 210, Jan. 240, Feb. 270, April 420, May 434, June 420, July 248, August 248, Sept. 240, Oct. 103, or a pen average of say 203 eggs in the first 15 months, or better. Now it will be noted by the breeder that certain individuals are doing more than others. Each individual becomes as



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